REMARKS

Claims 22-93 are pending in the Application, and all have been rejected in the Office Action mailed January 18, 2008. Claims 22, 40, 52, 68, and 79 are independent claims, from which claims 23-39, 41-51, 53-67, 69-78, and 80-93 depend, respectively. Applicants respectfully request reconsideration of claims 22-93, in light of the following remarks.

Amendments to the Specification

The Specification has been amended to update the list of related applications, to update the status of references, and to correct noted minor typographical errors. Applicants respectfully submit that these amendments do not add new matter.

Rejections of Claims

Claims 22-24, 29-42, 47-52, 57-69, 74-82, and 87-93 were rejected under 35 U.S.C. §102(e) as being anticipated by Kline et al. (US 6,157,653, hereinafter "Kline"). Claims 25-28, 43-45, 53-56, 70-73, and 83-86 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kline in view of Angle et al. (US 6,366,771, hereinafter "Angle"), and further in view of Trompower (US 6,132,306). Applicants respectfully traverse the rejections.

I. Kline Does Not Anticipate Claims 22-24, 29-42, 47-52, 57-69, 74-82, And 87-93

With regard to the anticipation rejections, MPEP 2131 states, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California,* 814 F.2d 628, 631 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). MPEP 2131 also states, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Applicant first addresses the rejection of claims 22 and 52. Claim 22 recites "[a] packet voice processing circuit comprising: an interface for receiving voice data packets via a packet network, each of the voice data packets comprising digital voice data and a

group identifier; a queue for storing the digital voice data; a processor for detecting a change in the group identifier; and the processor changing the processing of digital voice data, if a change in group identifier is detected, the processor continuing prior processing of digital voice data, otherwise." Claim 52 recites "[a] method of processing voice for communication over a packet network, the method comprising: receiving digital voice data packets communicated via the packet network, each of the digital voice data packets comprising digital voice data and a group identifier; queuing the digital voice data from the received digital voice data packets; processing digital voice data to produce a voice stream; monitoring the received digital voice data packets to detect a change in group identifier; changing the processing of digital voice data, if a change in group identifier is detected; and continuing prior processing of digital voice data, otherwise."

The Office asserts that Kline teaches "...a group identifier **[Figs. 2-3 Voice Packet Processor 212 assigns a sequence number and a connection identifier for the voice packet; col. 4, line 57-col. 5, line 4, col. 6, lines 23-29];**...a processor for detecting a change in the group identifier **[Figs. 1-5; Sequence number 306 allows Voice Packet Processor (PVR) 212 in the destination node 108 to detect a change when a packet has been dropped by the network; col. 6, lines 23-39;** the processor changing the processing of digital voice data, if a change in group identifier is detected **[Figs. 1-5; If at a PVR 212, a sequence number is found missing, it will interpolate the speech to fill in the audio channel for the missing packet. Or, Fig. 5, steps 505-510, it will discard the packet if the sequence number is invalid; col. 6, lines 23-39]**; and the processor continuing prior processing of digital voice data, otherwise **[Fig. 5, steps 515-555]**." (emphasis in original) *See* Office action at pages 2-3. Applicants respectfully disagree with what the Office Action alleges that Kline teaches.

Applicants respectfully submit that by the above statement the Office suggests that the "sequence number" of Kline teaches Applicants' element "group identifier", recited in claims 22 and 52. The Office suggests, above, that Kline teaches that "...changing the processing of digital voice data, if a change in group identifier is detected..." recited by Applicants' claims 22 and 52 is performed "...when a packet has been dropped by the network...." Kline clearly states at column 4, lines 59-60, however,

that "...[e]ach successive voice packet is assigned a successive sequence number...." (underline added) Applicants respectfully submit, therefore, that Kline teaches that the "sequence number", which the Office identifies as the element of Kline that teaches Applicants' "group identifier", changes with every packet. Kline does not teach or suggest, however, that the "PVR 212" will change the processing of digital voice data by "...interpolat[ing] the speech to fill in the audio channel for the missing packet..." or "...discard[ing] the packet if the sequence number is invalid..." as suggested above, if a change in sequence number is detected, in accordance with Applicants' claims 22 and 52. Instead, Applicants respectfully submit that the cited portions of Kline teach changing the processing of digital voice data when a loss of a packet is detected. Applicants respectfully submit that a missing "sequence number" is not the same as a change in "sequence number", as asserted. Applicants therefore respectfully submit that the Office has failed to show where Kline teaches at least "...changing the processing of digital voice data, if a change in group identifier is detected, the processor continuing prior processing of digital voice data, otherwise...", in accordance with Applicants' claims 22 and 52.

With regard to claims 34 and 62, Applicants respectfully submit that Kline does not teach or suggest, at least, "...wherein the predefined value is approximately 200 milliseconds...." The Office cites Fig. 5 and column 7, lines 9-64 as teaching Applicants' feature. Applicants first address Fig. 5 of Kline, shown below:

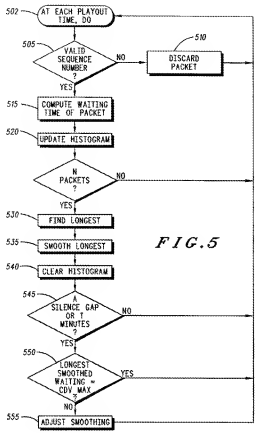

FIG. 5

In addition, Kline at column 6, line 58 to column 7, line 64 (that includes the cited portion, underlined) recites the following:

> FIG. 5 shows a flowchart of the adaptive smoothing delay process 500. Each time a voice packet playout occurs (step 502), the sequence number 306 of the voice packet is checked (step 505). If the sequence number is not valid, the packet is discarded (step 510), and the next packet (if there is one) is examined (step 502). If the sequence number is valid, the packet is playout and the waiting time of the packet is computed (step 515), where the waiting time is defined as the difference between the time instance that the packet was enqueued into the smoothing buffer and the time that the packet was dequeue from the smoothing buffer. A histogram of waiting times is then updated (step 520).
>
> After every N'th packet is played out, the histogram is post processed to find the longest waiting delay (step 530), the longest delay is smoothed (step 535), the histogram is cleared (step 540) in preparation for calculation of a new

histogram over the next N packets. The parameter N is chosen to equal a fixed time interval (typically seconds).

If there is either a silence gap in the speech or if a predetermined time "T" (typically minutes) has elapsed (step 545), then the longest smoothed waiting time is compared with the maximum expected waiting time, CDV Max (step 550). If the two are equal, then the smoothing delay is set at the optimum value, and no adjustment to the playout process is required.

If the two are not equal, then the playout time of the next received packet (and the playout times of subsequent packets) is adaptively adjusted such that the expected value of subsequent measured longest waiting times is equal to CDV max (step 555).

Quantitatively, the i'th voice packet arrives at the destination after a time period equal to d(i). It is possible to break d(i) into two parts, d_fixed and d_var(i).

where

d_fixed = the fixed transmission delay (the same for each packet) and

d_var(i) = the queuing delay experienced by the i'th packet.

For a specific call (i.e. a specific path through the network) the variable portion of the delay, d_var(i) can be assumed to be bounded between 0 and some maximum known value which we will refer to as the maximum cell delay variation, CDV_max. The value of CDV_max may be either a known network wide parameter, or alternatively, it can be calculated by routing entity 118 on a call by call basis (i.e. known for the specific path chosen by the routing entity at call establishment time)

FIG. 6 illustrates voice packet playout process 600 and the received packets 602, illustrating the typical time jitter experienced by the individual packets. The packets are not uniformly space in time (like they were at the output of the PVT 212). When the PVR 212 receives the packet, the enqueuing process 404 attaches a received time stamp to the packet.

Consider the following scenario illustrated in FIG. 6. When the first packet 602 of a call is received, the packet receiver applies an initial smoothing delay 604 equal to CDV max. After the initial smoothing delay expires, the packet receiver plays out the first voice packet (i.e., converts the voice packet to original form 606). The packet receiver is

> then executed one "packet" time (del T) later. When executed, the PVR searches the smoothing buffer 402 for a packet with the next expected sequence number. If found, then that packet is played out. If no such sequence number is found, then it either interpolates the speech in the audio channel (if the packet was dropped by the the network) or else plays out silence 608 if the last packet was the end of a talkspurt.

(underline and emphasis added)

Applicants respectfully submit that the flowchart of Fig. 5 shown above, and the cited portion of Kline at column 7, lines 9-64 simply explain the adaptive smoothing delay process of Kline. The Office suggests that the text "typically minutes" suggests Applicants' feature "...wherein the predefined value is approximately 200 milliseconds...." Applicants respectfully disagree. First, Applicants respectfully submit that a careful examination of Fig. 5 and the cited portion of Kline shown above makes it clear that the parameter described in decision block 545 of Fig. 5 of Kline, and in the text above, is an amount of time that determines one of two conditions under which the process of Fig. 5 adjusts smoothing, not a period of time during which digital voice data is held in a queue, as in Applicants' claims 34 and 62. Second, Applicants respectfully submit that a value of "...typically minutes..." as recited by cited portions of Kline, is not equivalent to "...approximately 200 milliseconds...", as recited by Applicants' claims 34 and 62. In fact, the two values differ by a factor of approximately 600 (2x60x5=600: "minutes" being plural, is at least 2 minutes; 60 second per minute; and one second being approximately five periods of "approximately 200 milliseconds".) The Office sets forth no reasoning why a difference of nearly three orders of magnitude makes two unrelated quantities equivalent. Therefore, for at least these reasons, Applicants respectfully submit that the Office has failed to show where the Kline reference teaches at least Applicants' claims 34 and 62.

With regard to claims 35 and 63, Applicants respectfully submit that Kline does not teach or suggest, at least, "...wherein the adjustable queuing time is determined using a test packet sent over the packet network...", as recited by Applicants' claims 35 and 63. The Applicants note that the Office cites Figs. 1-6 of Kline, and column 7, lines 9-64, as teaching this aspect of Applicants' claims 35 and 63. Applicants respectfully

submit, however, that the Office has failed to specifically identify the teaching of Kline that corresponds to Applicants' element "test packet". In fact, Kline makes no mention of a "test packet" in any of Figs. 1-6, or in lines 9-64 of column 7 (shown and discussed above), or anywhere else within the figures or text of Kline. The Office states that Kline teaches "...queuing time can be determined either a known network wide parameter or it can be calculated by specific path, test path, chosen by the routing entity;...." *See* Office action at page 4. Applicants respectfully submit that "...a known network wide parameter..." and "...specific path, test path chosen by the routing entity..." do not teach the use of a "test packet". Applicants respectfully submit that Kline clearly states, at column 3, lines 1-10:

> First, at call establishment time, the required smoothing delay is calculated by the connection control, routing subsystem. The required worst case smoothing delay varies call by call depending upon the specific path assigned to the call, but is known for a specific call once the path map of the call is known. For example, the worst case smoothing delay required is the sum of the individual worst case delays for all the queues that the call traverses. Other specific statistical worst cases can be calculated for calls that traverse many inter-nodal queues.

(underline added)

Applicants respectfully submit that the portion of Kline shown above teaches that the delay is calculated, "...is known for a specific call **once the path map of the call is known**...", and that "...the worst case smoothing delay required is the sum of the individual worst case delays for all the queues that the call traverses...." Applicants respectfully submit that Kline teaches calculating delay based on worst case delays of queues, not upon use of a "test packet". Indeed, there is nothing in Kline that says anything about the use of a "test packet" in determining queuing time. Therefore, for at least these reasons, Applicants respectfully submit that the Office has failed to show where Kline teaches or suggests each and every element of Applicants' claims 35 and 63.

Should the Office choose to maintain the rejection in a subsequent Office action, the Applicants respectfully request that the Office specifically identify the element of Kline that teaches Applicants' "test packet", and provide a clear and detailed

explanation of how and why the identified element of Kline teaches this aspect of Applicants' claims 35 and 63. Based at least upon the above, Applicants respectfully submit that the Office has failed to show how and why Kline teaches Applicants' claims 35 and 63, as required by M.P.E.P. §2131, and that claims 35 and 63 are therefore allowable.

With regard to claims 36, 37, 64, and 65, Applicants respectfully submit that the Office has failed to show where Kline teaches or suggests "...wherein the test packet is sent prior to establishment of voice communication...", as recited by Applicants' claims 36 and 64; and "...wherein the test packet is interspersed with digital voice data packets...", as recited by Applicants' claims 37 and 65. Based at least upon the above, Applicants respectfully submit that the Office has failed to show where Kline teaches a "test packet", and therefore necessarily fails to show where Kline teaches or suggests at least "...wherein the test packet is sent prior to establishment of voice communication...", and "...wherein the test packet is interspersed with digital voice data packets...", as recited by Applicants' claims 36 and 37. Therefore, Applicants respectfully submit that claims 36, 37, 64, and 65 are allowable over Kline.

Based at least upon the above, Applicants respectfully submit that the Office has failed to show where Kline teaches each and every element of Applicants' claims 22 and 52, as required by M.P.E.P. §2131, that the Office has failed to establish a *prima facie* case of anticipation, and that claims 22 and 52 are allowable over Kline. In addition to the reasons set forth above, Applicants respectfully submit that claims 23-39 and 53-67 depend, respectively, from claims 22 and 52, and are therefore allowable as well, for at least the same reasons set forth with respect to the rejections of claims 22 and 52. Accordingly, Applicants respectfully request that the rejection of claims 22-24, 29-39, 52, and 57-67 under 35 U.S.C. §102(e) be reconsidered and withdrawn.

With regard to claim 40, Applicants respectfully submit that the Office has failed to show where Kline teach or suggests each and every element of Applicants' claim 40, which recites "[a] packet voice processing circuit comprising: a processor for processing

digital voice data to detect a lack of voice activity for a minimum period of time; an interface for transmitting voice data packets via a packet network, each of the voice data packets comprising digital voice data and a group identifier; the processor changing the group identifier if a lack of voice activity for a minimum period of time is detected; and the processor leaving the group identifier unchanged, otherwise."

The Office asserts that Kline teaches "...a processor for processing digital voice data to detect a lack of voice activity for a minimum period of time **[Figs. 2-4; Voice Packet Processor detects the presence or silence of voice (so-called talkspurts); col. 5, lines 17-20]**;..." (emphasis in original) *See* Office action at page 5. Applicants respectfully disagree with what Kline allegedly teaches.

The Office cites the entire contents of three figures (Figs. 2-4) of Kline, and is unable to specifically identify any element from those figures that teaches Applicants' feature "...a processor for processing digital voice data to detect a lack of voice activity for a minimum period of time...", as recited in claim 40. While Fig. 2 of Kline does contain a block 212 labeled "Packet Processor", Applicants are unable to find anything in Figs. 2-4 of Kline that even mentions detection of "voice activity", or the detection of a "lack of voice activity". Applicants respectfully submit, therefore, that Figs. 2-4 of Kline certainly do not teach or suggest "...a processor for processing digital voice data to detect a lack of voice activity for a minimum period of time...", as recited by Applicants' claim 40. If Applicants have overlooked such a teaching, Applicants respectfully request the Office to specifically identify the element in Figs. 2-4 of Kline that teaches this aspect of Applicants' feature, and provide a detailed explanation of how and why the selected element of Kline teaches this aspect of Applicants' claim 40.

The Office also cites column 5, lines 17-20 of Kline as teaching Applicants' feature "...a processor for processing digital voice data to detect a lack of voice activity for a minimum period of time...." Kline states, at column 5, lines 17-20 (underlined):

> The dual purpose of the sequence number is true when the voice packet processor includes a voice activity detection mechanism. In this case, the PVT detects the presence or absence of voice (so called talkspurts), and only sends packets when it detects the presence of active speech signals in the audio channel. Thus, the PVT will send packets uniformly space by del_T units of time during a talk

> spurt, but will not send packets during silence intervals. However, the PVT keeps incrementing the sequence number at the same del_T time increments even during silence intervals when no packets are sent. Thus, when the next talkspurt occurs, the transmitted packets will contain sequence numbers that correspond to the expected relative playout times at the PVR. Thus, the PVR can continue to use the sequence number in the voice packets as a time stamp and a sequence number.

While the portion of Kline shown above does disclose that the "voice packet processor" of Kline includes a "voice activity detection mechanism" that detects the "presence or absence of voice", it fails to teach or suggest that the absence of voice is detected, if there is a "...lack of voice activity for a minimum period of time...", as recited by claim 40. Instead, Kline simply detects the presence of active speech signals, sends packets uniformly spaced in time when active speech is detected, and will not send packets during silent intervals. Kline fails to disclose that speech activity must be absent for a "minimum period of time" before lack of voice activity is detected. Applicants respectfully submit that the Office has failed to show where Kline teaches or suggests at least this aspect of Applicants' claim 40.

The Office also asserts that Kline teaches "...each of the voice data packets comprising digital voice data and a group identifier **[Figs. 2-3; Voice Packet Processor 212 converts the received voice to packets or receives the voice packet; col. 4, lines 28-44]** and a group identifier **[Figs. 2-3; Voice Packet Processor 212 assigns a sequence number and a connection identifier for the voice packet; col. 4, lines 57-col. 5, line 4, col. 6, lines 23-29]**; the processor changing the group identifier if a lack of voice activity for a minimum period of time is detected **[Figs. 2-4; Voice Packet Processor detects the presence or silence of voice (so-called talkspurts) and increments the sequence number, i.e., change the identifier, even during silent intervals. When next talkspurts occurs, the transmitted packets will contain the new sequence numbers; col. 5, lines 17-33]** and the processor leaving the group identifier unchanged, otherwise **[Figs. 2-4; Send packets with sequence numbers when Voice Packet Processor detects the presence of active speech signals; col. 5, lines 17-33].**" (emphasis in original) *See* Office action at pages 5-6. Applicants respectfully disagree with what Kline allegedly teaches.

Applicants respectfully submit that by the above, the Office again suggests that the "sequence number" of Kline is the equivalent of Applicants' element "group identifier", recited in claim 40. Applicants have discussed the "sequence number" of Kline, above, and have shown that the "sequence number" of Kline is not equivalent to Applicants' "group identifier". Applicants have also previously addressed the lack of any teaching of detection of voice activity in Figs. 2-4 of Kline.

Applicants respectfully submit that Kline clearly states at column 4, lines 59-60 that "...[e]ach successive voice packet is assigned a successive sequence number...." (underline added) Therefore, Applicants respectfully submit that Kline teaches that the "sequence number", which the Office identifies as the element of Kline that teaches Applicants' "group identifier", changes with every packet. In fact, Kline at column 5, lines 17-32, which was specifically cited by the Office, states that:

> The dual purpose of the sequence number is true when the voice packet processor includes a voice activity detection mechanism. In this case, the PVT detects the presence or absence of voice (so called talkspurts), and only sends packets when it detects the presence of active speech signals in the audio channel. Thus, the PVT will send packets uniformly space by del_T units of time during a talk spurt, but will not send packets during silence intervals. However, **the PVT keeps incrementing the sequence number at the same del_T time increments even during silence intervals** when no packets are sent. Thus, when the next talkspurt occurs, the transmitted packets will contain sequence numbers that correspond to the expected relative playout times at the PVR. Thus, the PVR can continue to use the sequence number in the voice packets as a time stamp and a sequence number.

The portion of Kline shown above clearly teaches that the "sequence number" of Kline changes every "del_T" seconds, without regard to whether voice activity is detected, or whether there is a lack of voice activity. Therefore, Applicants respectfully submit that the "sequence number" of Kline, which the Office has identified as teaching Applicants' element "group identifier", does not teach or suggest "...the processor **changing the group identifier if a lack of voice activity for a minimum period of time is detected** ... and the processor **leaving the group identifier unchanged,**

otherwise...", as alleged by the Office. Instead, **the "sequence number" of Kline changes based upon time, and does so without regard to voice activity**. Applicants therefore respectfully submit that the Office has failed to show where Kline teaches at least "...a processor for processing digital voice data to detect a lack of voice activity for a minimum period of time;...a group identifier; the processor changing the group identifier if a lack of voice activity for a minimum period of time is detected; and the processor leaving the group identifier unchanged, otherwise...", in accordance with Applicants' claim 40.

Based at least upon the above, Applicants respectfully submit that the Office has failed to show where Kline teaches each and every element of Applicants' claim 40, as required by M.P.E.P. §2131, that the Office has failed to establish a *prima facie* case of anticipation, and that claim 40 is allowable over Kline. Applicants respectfully submit that claims 41-51 depend from claim 40. Accordingly, Applicants respectfully request that the rejection of claims 40-42 and 47-51 under 35 U.S.C. §102(e) be reconsidered and withdrawn.

With regard to claims 68 and 79, Applicants respectfully submit that claims 68 and 79 recite limitations similar in many ways to the limitations of claims 22, 40, and 52 discussed above, and that claims 68 and 79 are allowable for at least the reasons set forth above with respect to claims 22, 40, and 52. Applicants respectfully submit that claims 69-78 and 80-93 depend, respectively, from claims 68 and 79, and are also allowable, for at least the same reasons. Accordingly, Applicants respectfully request that the rejections of claims 68, 69, 74-82, and 87-93 under 35 U.S.C. §102(e) be reconsidered and withdrawn.

II. The Proposed Combination Of Kline, Angle, And Trompower Does Not Render Claims 25-28, 43-45, 53-56, 70-73, And 83-86 Unpatentable

Applicants respectfully submit that claims 25-28, 43-45, 53-56, 70-73, and 83-86 depend respectively, from claims 22, 40, 52, 68, and 79. Applicants believe that claims 22, 40, 52, 68, and 79 are allowable over the proposed combination of references, in that the Office has failed to demonstrate how and why Angle and Trompower overcome

the shortcomings of Kline, set forth above. Because claims 22, 40, 52, 68, and 79 are allowable over the proposed combination of Kline, Angle, and Trompower, Applicants respectfully submit that claims 25-28, 43-45, 53-56, 70-73, and 83-86, that depend therefrom, are allowable as well, for at least the same reasons. Accordingly, Applicants respectfully request that the rejection of claims 25-28, 43-45, 53-56, 70-73, and 83-86 under 35 U.S.C. §103(a) be reconsidered and withdrawn.

Conclusion

The Office Action makes various statements regarding claims and the cited references that are now moot in light of the above. Thus, Applicants will not address such statements at the present time. However, the Applicants expressly reserve the right to challenge such statements in the future should the need arise (e.g., if such statements should become relevant by appearing in a rejection of any current or future claim).

Applicants believe that all of claims 22-93 are in condition for allowance. Should the Examiner disagree or have any questions regarding this submission, the Applicant invites the Examiner to contact the undersigned at (312) 775-8000 for an interview.

An early Office Action on the merits and allowance of claims 22-93 is respectfully requested.

The Commissioner is hereby authorized to charge any fees required by this submission to the Deposit Account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Respectfully submitted,

Dated: May 19, 2008

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